




UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
SOLID WASTE AND EMERGENCY  
RESPONSE

August 11, 2005

**MEMORANDUM**

**SUBJECT:** National Remedy Review Board Recommendations for the Midnite Mine Superfund Site

**FROM:** Jo Ann Griffith, Chair   
National Remedy Review Board  
Office of Solid Waste and Emergency Response

**TO:** Dan Opalski, Director  
Office of Environmental Cleanup  
Region 10

**Purpose**

The National Remedy Review Board (NRRB) has completed its review of the proposed cleanup action for the Midnite Mine Superfund Site in Wellpinit, Washington. This memorandum documents the NRRB's advisory recommendations.

**Context for NRRB Review**

The Administrator announced the NRRB as one of the October 1995 Superfund Administrative Reforms to help control response costs and promote consistent and cost-effective decisions. The NRRB furthers these goals by providing a cross-regional, management-level, "real time" review of high cost proposed response actions prior to their being issued for public comment. The Board reviews all proposed cleanup actions that exceed its cost-based review criteria.

The NRRB evaluates the proposed actions for consistency with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and relevant Superfund policy and guidance. It focuses on the nature and complexity of the site; health and environmental risks; the range of alternatives that address site risks; the quality and reasonableness of the cost estimates

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for alternatives; regional, state/tribal, and other stakeholder opinions on the proposed actions, and any other relevant factors.

Generally, the NRRB makes advisory recommendations to the appropriate regional decision maker. The Region will then include these recommendations in the administrative record for the site, typically before it issues the proposed cleanup plan for public comment. While the Region is expected to give the Board's recommendations substantial weight, other important factors, such as subsequent public comment or technical analyses of response options, may influence the final regional decision. The Board expects the regional decision maker to respond in writing to its recommendations within a reasonable period of time, noting in particular how the recommendations influenced the proposed cleanup decision, including any effect on the estimated cost of the action. It is important to remember that the NRRB does not change the Agency's current delegations or alter in any way the public's role in site decisions.

### **Overview of the Proposed Action**

The Midnite Mine Superfund Site is located on tribal trust and allotment lands in the Spokane Indian Reservation in eastern Washington. The mine, an open-pit uranium mine, operated from 1955 to 1981. Waste rock piles and fill, stockpiles of ore and lower grade protore, two open pits with pit lakes, backfilled pits and other mine-related features cover about 350 sloped acres at 2,400 to 3,460 feet above sea level. Contaminated water is currently being collected and treated prior to discharge. The Region's proposed alternative, as presented to the Board, included consolidation of all waste material within the two open pits, leaving in place the waste rock in the existing backfilled pits, placement of a cover over the waste in all filled pits, removal of water that enters the filled pits, replacement of the water treatment plant, construction of a storm water management system, institutional controls, long-term operation, maintenance, and monitoring and five-year reviews.

### **NRRB Advisory Recommendations**

The NRRB reviewed the information package describing this proposal and discussed related issues with you and your staff as well as with representatives from the Spokane Tribe (see attached list) on July 20, 2005. Based on this review and discussion, the Board offers the following comments:

1. The Board recognizes that there may be some issues related to several of the Tribal standards that could impact the remedy. The Board recommends that the Region continue to explore these issues and identify potential flexibilities that could affect the scope of the cleanup.
2. Based on the package presented to the Board, water treatment to reduce sulfate to 250 parts per million (ppm) is being considered. Treatment to such low levels is both difficult and very costly, and significantly increases the quantity of sludge for disposal. After completion of the actions to consolidate the mining waste materials, less sulfate may be generated. In that there may be some uncertainty relative to the degree of sulfate

treatment necessary, the Board recommends that the Region consider phasing the implementation of components of the treatment system to allow the benefits of the source control actions on sulfate levels to be evaluated. The Region may also want to explore the option of redirecting the discharge from the water treatment plant to a larger water body with more assimilation capacity, which would lessen the degree of sulfate treatment and the quantity of generated sludge and associated disposal costs.

3. The Board noted that costly off-site sludge disposal was being evaluated as an option. At other mining sites, water treatment sludge is typically disposed on-site to reduce disposal costs. The Board recommends that the Region continue to explore the possibility of on-site sludge disposal.
4. The tribal exposure assumptions in the baseline risk assessment were significantly different from standard EPA exposure assumptions. At the meeting, the future land use was presented as a hunting lodge with some year-round land use (caretaker properties). While the Board is unable to assess the reasonableness of these assumptions, the Board noted that neither the land use nor exposure assumptions were necessary to provide a basis for action at the site, since even a worker exposure scenario would warrant remedial action. The Board recommends that the decision documents provide some discussion of a range of exposures and land use in the uncertainty discussion. In addition, the decision document should also discuss the fact that other scenarios that generally result in less exposure, such as commercial scenarios, would also trigger action. The Board also notes that there may be other factors that should be considered if the hunting lodge/residential use is contemplated (e.g., institutional controls for contaminated ground water, controls for radon, etc.).
5. Water treatment costs estimated for the various alternatives were based on the assumption that water treatment volume reduction directly correlated with contaminant load reduction, and reduced recovery times for ground and surface water and sediment. While consolidation of reactive waste to exclude water and air often reduces the volume of acid mine drainage (AMD) formation, reductions in contaminant loading and time to achieve the remedial action objectives (RAOs) are not always directly proportional to AMD volume reduction. Capital costs for Alternative 5a are approximately double those for Alternative 3c largely due to additional waste consolidation in the open pits. The Region indicated that this additional waste consolidation with the increased capital costs has the benefit of reducing long-term operation and maintenance costs. The Board recommends that the decision documents include information on how additional consolidation is expected to result in long-term cost savings.
6. The Board notes that several conceptual cap/cover designs were developed to mitigate radon flux, water percolation, and radiation exposure rates. The cap thickness of these conceptual designs ranged from 2.7 feet to 10.7 feet and would require significant quantities of borrow material to construct. Considering the limitations in acquiring suitable on-site and/or off-site borrow material for cap installation, the Region should

evaluate alternate cap designs (e.g., crushing on-site material, geosynthetic clay liner, etc.) that could minimize the quantity of borrow material required.

7. As noted in the comments provided by Dawn Mining Company, the Tribe's opposition to the use of earthen borrow materials from reservation lands for cover construction results in higher remedy costs. When questioned at the meeting, the Tribe indicated that sufficient borrow materials may not be available on the site or on reservation lands to fully construct the waste covers/caps. In view of the potential cost savings, the Board encourages the Region to continue discussions with the Tribe to explore whether at least a portion of the borrow materials could be obtained from reservation lands.
8. The Board recommends that the Region develop a surface water management plan based on best management practices for the site to include: vegetation type, distribution, erosion control measures, conveyance types, and target evapo-transpiration rates. We believe that such an approach may potentially lead to a reduction in the amount of ground/surface water that would need to be treated. The Region should also include the cost for development of the plan and any associated activities in the decision documents.

The NRRB appreciates the Region's efforts in working together with the potentially responsible parties, state, and community groups at this site. We request that a draft response to these findings be included with the draft Proposed Plan when it is forwarded to your OSRTI Regional Support Branch for review. The Regional Support Branch will work with both myself and your staff to resolve any remaining issues prior to your release of the Proposed Plan. Once your response is final and made part of the site's Administrative Record, then a copy of this letter and your response will be posted on the NRRB website.

Thank you for your support and the support of your managers and staff in preparing for this review. Please call me at (703) 603-8774 should you have any questions.

cc: M. Cook (OSRTI)  
E. Southerland (OSRTI)  
S. Bromm (OSRE)  
J. Woolford (FFRRO)  
Rafael Gonzalez (OSRTI)  
NRRB members

## **Attachment**

Midnite Mine Superfund Site NRRB Review  
July 20, 2005

<u>Name</u>	<u>Affiliation</u>
Dan Opalski	Director, Office of Environmental Cleanup, EPA Region 10
Marc Stifleman	EPA Region 10
Cyndy Mackey	EPA Region 10
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Fred Kirschner	Consultant, Spokane Tribe
Gerald Nicodemus	Spokane Tribal Council
David Wynecoop	Spokane Tribal Council
Shannon Work	Attorney, Spokane Tribe
Barbara Harper	Toxicologist, Spokane Tribe
Randall Connolly	Spokane Tribe
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